AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

Claim 1. (Currently Amended) A digital reception apparatus comprising:

a receiver ~~for performing~~ that performs reception processing on a received signal; and

a distortion corrector ~~for performing~~ that corrects a non-linear distortion ~~correction on~~ of the ~~reception processing~~ processed received signal ~~using a characteristic of said receiver, and thereby removing a non-linear distortion from the received signal~~, the distortion corrector comprising a distortion estimator that estimates the distortion and outputs a correcting signal based on an inverse distortion characteristic of the receiver, and a distortion compensator that multiplies the received signal and the correcting signal to remove the non-linear distortion from the received signal.

Claim 2. (Currently Amended) The digital reception apparatus according to claim 1, wherein ~~said~~ the receiver ~~includes~~ comprises a quadrature demodulator ~~for performing~~ that performs quadrature demodulation processing on the received signal.

Claim 3. (Currently Amended) The digital reception apparatus according to claim 1, wherein ~~said~~ the receiver ~~includes~~ comprises a filter calculator ~~for performing~~ that performs filter calculation ~~that limits~~ to limit a frequency band of the received signal.

Claim 4. (Currently Amended) The digital reception apparatus according to claim 1, wherein ~~said~~ the receiver ~~includes~~ comprises an adjuster ~~for adjusting the~~ that adjusts

an amplitude of the received signal, based on ~~the~~ an amplitude of a signal necessary for demodulation contained in the received signal.

Claim 5. (Currently Amended) The digital reception apparatus according to claim 1, wherein said receiver ~~includes~~ comprises a quantizer ~~for performing~~ that performs linear quantization on the received signal.

Claims 6-7. (Canceled)

Claim 8. (Currently Amended) The digital reception apparatus according to claim ~~7~~ 13, wherein ~~said~~ the distortion corrector ~~converts the received signal that has been converted into a~~ corrects the non-linear ~~signal by said quantizer into a linear signal,~~ distortion using at least a quantization characteristic of ~~said~~ the quantizer.

9. (Currently Amended) The digital reception apparatus according to claim 8, the distortion converter further comprising:

a filter calculator ~~for performing~~ that performs filter calculation on the received signal that has been converted into a non-linear signal by ~~said~~ the quantizer.

10. (Currently Amended) The digital reception apparatus according to claim 8, the distortion converter further comprising:

a calculator ~~for performing~~ that performs arithmetical calculation on the received signal that has been converted into a non-linear signal by ~~said~~ the quantizer.

11. (Currently Amended) The digital reception apparatus according to claim ~~7~~ 13, wherein ~~said~~ the distortion corrector comprises a signal processor ~~for performing~~ that performs digital signal processing on the received signal that has been converted into a non-linear signal by ~~said~~ the quantizer, ~~and said~~ the signal processor ~~converts~~ converting the ~~digital signal processing processed received~~ non-linear signal into a signal

represented by a code system ~~suitable for another digital signal processing to be performed on the digital signal processing processed~~ based on at least one characteristic of the received signal.

12. (Currently Amended) The digital reception apparatus according to claim 11, ~~further comprising:~~

~~converter for converting a demodulated signal obtained by demodulation processing in said signal processor into a linear signal,~~ wherein ~~said~~ the receiver performs the reception processing on the received signal[[,]] based on a control signal contained in the demodulated ~~signal that has been converted into the~~ linear signal.

Claim 13. (New) A digital reception apparatus comprising:

a receiver that performs reception processing on a received signal, the receiver comprising a non-linear quantizer that converts the received signal to a non-linear quantized signal;

a distortion converter that converts the non-linear quantized signal to a linear signal for demodulation, the distortion converter comprising a distortion corrector that corrects a non-linear distortion introduced by at least the non-linear quantizer.

Claim 14. (New) The digital reception apparatus according to claim 13, wherein the distortion corrector comprises a distortion estimator that estimates the distortion and outputs a correcting signal based on an inverse distortion characteristic of the receiver, and a distortion compensator that multiplies the received signal and the correcting signal to remove the non-linear distortion from the received signal.

Claim 15. (New) The digital reception apparatus according to claim 11, wherein the code system comprises codes based on a logarithm representation of the digital signal processing.

Claim 16. (New) The digital reception apparatus according to claim 11, wherein the code system comprises linear codes.

Claim 17. (New) The digital reception apparatus according to claim 13, wherein the received signal on which the reception processing is performed comprises an instantaneous signal.

Claim 18. (New) The digital reception apparatus according to claim 1, wherein the received signal on which the reception processing is performed comprises an instantaneous signal.

Claim 19. (New) A method for receiving a digital signal comprising:

initially processing a received signal;

estimating a non-linear distortion of the processed received signal introduced by the initial processing;

generating a correcting signal based on an inverse distortion characteristic of the initial processing;

multiplying the processed received signal and the correcting signal to remove the non-linear distortion from the processed received signal;

demodulating the multiplied received signal.

Claim 20. (New) The method for receiving the digital signal according to claim 19, wherein the initial processing comprises at least one of amplifying, quantizing and quadrature demodulating the received signal.